

Section 15: Anatomy of a SQL Statement

Objectives

- Match projection, selection and join with their correct functions capabilities
- Create a basic SELECT statement
- Use the correct syntax to display all rows in a table
- Use the correct syntax to select specific columns in a table, modify the way data is displayed, and/or perform calculations using arithmetic expressions and operators
- Formulate queries using correct operator precedence to display desired results
- Define a null value
- Demonstrate the effect null values create in arithmetic expressions
- Construct a query using a column alias

Vocabulary

Directions: Identify the vocabulary word for each definition below.

1. _____ Display data from two or more related tables.
2. _____ A symbol used to perform an operation on some values.
3. _____ An implementation of an attribute or relationship in a table.
4. _____ The capability in SQL to choose the columns in a table that you want returned from a query.
5. _____ A value that is unavailable, unassigned, unknown, or inapplicable.
6. _____ Renames a column heading.
7. _____ A mathematical equation.
8. _____ The capability in SQL to choose the rows in a table returned from a query.
9. _____ Retrieves information from the database
10. _____ Specifies the columns to be displayed
11. _____ Specifies the table containing the column listed in the select clause

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|-----|-------|----------------------------------|
| 12. | _____ | An individual SQL statement |
| 13. | _____ | Part of a SQL statement |
| 14. | _____ | A combination of the two clauses |

Try It / Solve It

Now you know the basics of a SELECT statement.
It's time to practice what you've learned.

1. Write a SQL statement that demonstrates a projection.
2. Write a query that displays the last_name and email addresses for all the people in the DJ on Demand d_client table. The column headings should appear as "Client" and "Email Address."
3. The manager of Global Fast Foods decided to give all employees at 5%/hour raise + a \$.50 bonus/hour. However, when he looked at the results, he couldn't figure out why the new raises were not as he predicted. Ms. Doe should have a new salary of \$7.59, Mr. Miller's salary should be \$11.00, and Monique Tuttle should be \$63.50. He used the following query. What should he have done?

```
SELECT last_name, salary *.05 +.50  
FROM f_staffs;
```

4. Which of the following would be the easiest way to see all rows in the d_songs table?
 - a. SELECT id, title, duration, artist, type_code
 - b. SELECT columns
 - c. SELECT *
 - d. SELECT all
5. If $\text{tax} = 8.5\% * \text{car_cost}$ and $\text{license} = \text{car_cost} * .01\%$, which value will produce the largest car payment?
 - a. $\text{Payment} = (\text{car_cost} * 1.25) + 5.00 - (\text{tax}) - (\text{license})$
 - b. $\text{Payment} = \text{car_cost} * 1.25 + 5.00 - (\text{tax} - \text{license})$
6. In the example below, identify the keywords, the clause(s), and the statement(s):

```
SELECT employee_id, last_name  
FROM employees
```

7. Label each example as SELECTION, PROJECTION or JOIN.
- a. Please give me Mary Adam's email address.
 - b. I will need each customer's name and the order_total for their order.
 - c. I would like only the manager_id column, not any of the other columns.

8. Which of the following statements are true?

- a. $\text{null} * 25 = 0$;
- b. $\text{null} * 6.00 = 6.00$
- c. $\text{null} * .05 = \text{null}$
- d. $(\text{null} + 1.00) + 5.00 = 5.00$

9. How will the column headings be labeled in the following example?

```
SELECT bear_id bears, color AS Color, age "age"  
FROM animals;
```

- a. bears, color, age
- b. BEARS, COLOR, AGE
- c. BEARS, COLOR, age
- d. Bears, Color, Age

10. Which of the following words must be in a SELECT statement in order to return all rows?

- a. SELECT only
- b. SELECT and FROM
- c. FROM only
- d. SELECT * only